AMENDMENTS TO THE CLAIMS

1. (Currently amended) In a simulation environment, a computer-implemented method for controlling collection of data generated by a dynamic system model, comprising:

providing the dynamic system model in the simulation environment on a computer system;

providing a controller system separate from the dynamic system model on the computer system, the controller system including:

at least two free-running data modules, the free-running data modules communicatively coupled to collect data from the dynamic system model,

one or more functions, the one or more functions executed by at least two of the free-running data modules, and

at least one controller controlling two or more of the free-running data modules;

activating the dynamic system model, thereby generating data; and

controlling two or more of the free-running data modules to simultaneously execute at least one of the functions to achieve synchronization of at least one of collection or analysis of the generated data at a point in time, the controlling performed using the at least one controller.

2. (Currently amended) The method of claim 1, where:

each of the two or more of the free-running data modules includes a display of the data collected by that free-running data module,

the at least one of the functions includes a snapshot function, the snapshot function freezing the display of the data collected at the free-running data module that executes the snapshot function, and where:

the controlling simultaneously executes the snapshot function at the two or more of the free-running data modules to synchronously freeze ~~a~~ the displays of the data collected by the controlled free-running data modules, the freezing occurring while the dynamic system model continues to execute and the generated data continues to be collected by the controlled free-running data modules.

3. (Previously presented) The method of claim 2, further comprising providing the display of data collected while data continues to be collected without updating the display.

4. (Currently amended) The method of claim 2, further comprising manipulating at least one of the frozen displays of data collected while data continues to be collected.

5. (Currently amended) The method of claim 1, where:

the at least one of the functions includes a suspend function, and where:

the controlling simultaneously executes the suspend function at the two or more of the free-running data modules to synchronously pause collection of the generated data by the controlled free-running data modules while the dynamic system model continues to operate.

6. (Currently amended) The method of claim 1, further comprising providing an interface having a communication port for communicating with each of the two or more of the free-running data modules.

7. (Currently amended) The method of claim 1, further comprising directing a review of data collected by the two or more of the free-running data ~~collection instruments~~ modules by utilizing a review function.

8. (Previously presented) The method of claim 1, further comprising defining data history parameters utilizing a data history function.

9. (Original) The method of claim 8, wherein the data history parameters comprise at least one of amount of data history, amount of memory allocation for storing data history, types of data collected, signal attributes, and data formats.

10. (Original) The method of claim 1, further comprising directing a buffering mode to be utilized during data collection from one of a circular buffering mode, a finite buffering mode, and a buffer extension mode by executing a data buffering mode function.

11. (Previously presented) The method of claim 1, further comprising utilizing a scroll function to scroll through previously collected data while the dynamic system model is operating.

12. (Original) The method of claim 1, further comprising providing a time tracking function that directs a graphical display indication of a time history of data collected.

13. (Currently amended) The method of claim 1, wherein ~~synchronizing~~ controlling the two or more of the free-running data modules comprises conveying to ~~the selected of~~ the two or more of the free-running data modules a direction to synchronize execution of the at least one ~~or more~~ of the functions at ~~the selected of~~ the two or more of the free-running data modules by utilizing a broadcasting function.

14. (Original) The method of claim 1, further comprising utilizing an event based trigger to initiate a data module action.

15. (Original) The method of claim 1, wherein the simulation environment comprises at least one of a graphical, textual, data flow, time based, and event based environments.

16. (Currently amended) The method of claim 1, wherein the two or more of the free-running data modules are virtually formed using at least one of MATLAB software, JAVA, C++ and object-oriented code.

17. (Currently amended) The method of claim 1, wherein the two or more of the free-running data modules provide displays in the form of at least one of textual, graphical, multi-dimensional, oscilloscope, and spectrum analyzer.

18. (Canceled)

19. (Currently amended) In a simulation environment, a computer-implemented method for controlling collection of data generated by a dynamic system model, comprising:

providing the dynamic system model in the simulation environment on a computer system;

providing a controller system separate from the dynamic system model on the computer system, the controller system including:

at least two data modules, the data modules communicatively coupled to collect data from the dynamic system model, each of the at least two data modules operating in one of a free-running mode or a triggered mode, wherein a data module operating in triggered mode starts data collection when a trigger event occurs and stops data collection when a stop event occurs, the trigger event being external to the data module, the stop event being internal to the data module,

a snapshot function executed by at least two of the data modules that include a display of the data collected by that data module, the snapshot function freezing the display of the data collected, and

at least one controller controlling two or more of the data modules;

activating the dynamic system model, thereby generating data; and

controlling a first set of two or more of the data modules to simultaneously execute the snapshot function to synchronously freeze ~~a~~ the displays of the data collected by the controlled data modules, the freezing occurring while the dynamic system model continues to execute and the generated data continues to be collected by the controlled data modules, the controlling performed using the at least one controller between the starting and the stopping of the first set.

20. (Previously presented) The method of claim 19, further comprising providing the display of data collected while data continues to be collected without updating the display.

21. (Currently amended) The method of claim 19, further comprising manipulating at least one of the frozen displays of data collected while data continues to be collected.

22. (Currently amended) The method of claim 19, further comprising:

controlling a second set of two or more of the data modules to simultaneously execute a suspend function to synchronously pause collection of the generated data by the second set ~~two or more data modules~~ while the dynamic system model continues to operate, the controlling performed using the at least one controller, the second set differing from the first set by at least one data module.

23. (Currently amended) The method of claim 19, further comprising providing an interface having a communication port for communicating with each of the ~~two or more data modules~~ first set.

24. (Currently amended) The method of claim 19, further comprising directing a review of data collected by the first set ~~two or more data collection instruments~~ by utilizing a review function.

25. (Previously presented) The method of claim 19, further comprising defining data history parameters utilizing a data history function.

26. (Original) The method of claim 25, wherein the data history parameters comprise at least one of amount of data history, amount of memory allocation for storing data history, types of data collected, signal attributes, and data formats.

27. (Original) The method of claim 19, further comprising directing a buffering mode to be utilized during data collection from one of a circular buffering mode, a finite buffering mode, and a buffer extension mode by executing a data buffering mode function.

28. (Previously presented) The method of claim 19, further comprising utilizing a scroll function to scroll through previously collected data while the dynamic system model is operating.

29. (Original) The method of claim 19, further comprising providing a time tracking function that directs a graphical display indication of a time history of data collected.

30. (Currently amended) The method of claim 19, wherein ~~synchronizing~~ controlling the ~~two or more data modules~~ first set comprises conveying to ~~the selected of~~ the ~~two or more data modules~~ first set a direction to synchronize execution of ~~one or more functions~~ the snapshot function at ~~the selected of the two or more data modules~~ the first set by utilizing a broadcasting function.

31. (Original) The method of claim 19, further comprising utilizing an event based trigger to initiate a data module action.

32. (Original) The method of claim 19, wherein the simulation environment comprises at least one of a graphical, textual, data flow, time based, and event based environments.

33. (Currently amended) The method of claim 19, wherein the ~~two or more data modules are~~ first set is virtually formed using at least one of MATLAB software, JAVA, C++ and object-oriented code.

34. (Currently amended) The method of claim 19, wherein the ~~two or more data modules~~ first set provides displays in the form of at least one of textual, graphical, multi-dimensional, oscilloscope, and spectrum analyzer.

35. (Canceled)

36. (Currently amended) In a simulation environment, a computer-implemented method for controlling collection of data generated by a dynamic system model, comprising:

providing the dynamic system model in the simulation environment on a computer system;

providing a controller system separate from the dynamic system model on the computer system, the controller system including:

at least two free-running data modules, the free-running data modules communicatively coupled to collect data from the dynamic system model,

a suspend function executed by at least two of the free-running data modules, and

at least one controller controlling two or more of the free-running data modules;

activating the dynamic system model, thereby generating data; and

controlling a first set of two or more of the at least two free-running data modules to simultaneously execute the suspend function to synchronously pause collection of the generated data by the controlled free-running data modules while the dynamic system model continues to operate, the controlling performed using the at least one controller.

37. (Currently amended) The method of claim 36, the controller system further including:

a second set of two or more of the at least two free-running data modules, each data module in the second set including a display that displays data collected by that free-

running data module, the second set differing from the first set by at least one free-running data module; and

a snapshot function executed by the second set, the snapshot function freezing the display of the data collected at the free-running data module that executes the snapshot function; and

the method further comprising:

controlling ~~a second two or more of the data modules~~ the second set to simultaneously execute a snapshot function to synchronously freeze ~~a~~ the displays of the data collected by the second ~~two or more data modules~~ set, the freezing occurring while the dynamic system model continues to execute and the generated data continues to be collected by the second ~~two or more data modules~~ set, the controlling performed using the at least one controller.

38. (Previously presented) The method of claim 37, further comprising providing the display of data collected while data continues to be collected without updating the display.

39. (Currently amended) The method of claim 37, further comprising manipulating at least one of the frozen displays of data collected while data continues to be collected.

40. (Currently amended) The method of claim 36, further comprising providing an interface having a communication port for communicating with each of the first set ~~two or more data modules~~.

41. (Currently amended) The method of claim 36, further comprising directing a review of data collected by the first set ~~two or more data collection instruments~~ by utilizing a review function.

42. (Previously presented) The method of claim 36, further comprising defining data history parameters utilizing a data history function.

43. (Original) The method of claim 42, wherein the data history parameters comprise at least one of amount of data history, amount of memory allocation for storing data history, types of data collected, signal attributes, and data formats.

44. (Original) The method of claim 36, further comprising directing a buffering mode to be utilized during data collection from one of a circular buffering mode, a finite buffering mode, and a buffer extension mode by executing a data buffering mode function.

45. (Previously presented) The method of claim 36, further comprising utilizing a scroll function to scroll through previously collected data while the dynamic system model is operating.

46. (Original) The method of claim 36, further comprising providing a time tracking function that directs a graphical display indication of a time history of data collected.

47. (Currently amended) The method of claim 36, wherein ~~synchronizing~~ controlling the ~~two or more data modules~~ first set comprises conveying to ~~the selected of~~ the ~~two or more data modules~~ first set a direction to synchronize execution of ~~one or more functions~~ the suspend function at ~~the selected of~~ the ~~two or more data modules~~ first set by utilizing a broadcasting function.

48. (Original) The method of claim 36, further comprising utilizing an event based trigger to initiate a data module action.

49. (Original) The method of claim 36, wherein the simulation environment comprises at least one of a graphical, textual, data flow, time based, and event based environments.

50. (Currently amended) The method of claim 36, wherein the ~~two or more data modules are~~ first set is virtually formed using at least one of MATLAB software, JAVA, C++ and object-oriented code.

51. (Currently amended) The method of claim 36, wherein the ~~two or more data modules~~ first set provides displays in the form of at least one of textual, graphical, multi-dimensional, oscilloscope, and spectrum analyzer.

52. (Canceled)

53. (Currently amended) A computer-implemented method for controlling collection of data generated by a dynamic system, comprising:

providing the dynamic system;

providing a controller system separate from the dynamic system on a computer system, the controller system including:

at least two data modules, the data modules communicatively coupled to collect data from the dynamic system, each of the at least two data modules operating in one of a free-running mode or a triggered mode, wherein a data module operating in triggered mode starts data collection when a trigger event occurs and stops data collection when a stop event occurs, the trigger event being external to the data module, the stop event being internal to the data module,

one or more functions, the one or more functions executed by at least two of the data modules, and

at least one controller controlling two or more of the data modules;

activating the dynamic system, thereby generating data; and

controlling two or more of the data modules to simultaneously execute at least one of the functions to achieve synchronization of at least one of collection or analysis of the generated data at a point in time, the controlling performed using the at least one controller between the starting and the stopping of the controlled data modules.

54. (Currently amended) The method of claim 53, where:

each of the two or more of the data modules includes a display of the data collected by that data module,

the at least one of the functions includes a snapshot function, the snapshot function freezing the display of the data collected at the data module that executes the snapshot function, and where:

the controlling simultaneously executes the snapshot function at the two or more data modules to synchronously freeze ~~a~~ the displays of the data collected by the controlled data modules, the freezing occurring while the dynamic system continues to execute and the generated data continues to be collected by the controlled data modules.

55. (Previously presented) The method of claim 54, further comprising providing the display of data collected while data continues to be collected without updating the display.

56. (Currently amended) The method of claim 54, further comprising manipulating at least one of the frozen displays of data collected while data continues to be collected.

57. (Previously presented) The method of claim 53, where:

the at least one of the functions includes a suspend function, and where:

the controlling simultaneously executes the suspend function at the two or more data modules to synchronously pause collection of the generated data by the controlled data modules while the dynamic system continues to operate.

58. (Original) The method of claim 53, further comprising providing an interface having a communication port for communicating with each of the two or more data modules.

59. (Currently amended) The method of claim 53, further comprising directing a review of data collected by the two or more of the data ~~collection instruments~~ modules by utilizing a review function.

60. (Previously presented) The method of claim 53, further comprising defining data history parameters utilizing a data history function.

61. (Original) The method of claim 60, wherein the data history parameters comprise at least one of amount of data history, amount of memory allocation for storing data history, types of data collected, signal attributes, and data formats.

62. (Original) The method of claim 53, further comprising directing a buffering mode to be utilized during data collection from one of a circular buffering mode, a finite buffering mode, and a buffer extension mode by executing a data buffering mode function.

63. (Previously presented) The method of claim 53, further comprising utilizing a scroll function to scroll through previously collected data while the dynamic system is operating.

64. (Original) The method of claim 53, further comprising providing a time tracking function that directs a graphical display indication of a time history of data collected.

65. (Currently amended) The method of claim 53, wherein ~~synchronizing~~ controlling the two or more of the data modules comprises conveying to ~~the selected of~~ the two or more of the data modules a direction to synchronize execution of the at least one ~~or more~~ of the functions at ~~the selected of~~ the two or more of the data modules by utilizing a broadcasting function.

66. (Original) The method of claim 53, further comprising utilizing an event based trigger to initiate a data module action.

67. (Original) The method of claim 53, wherein the simulation environment comprises at least one of a graphical, textual, data flow, time based, and event based environments.

68. (Currently amended) The method of claim 53, wherein the two or more of the data modules are virtually formed using at least one of MATLAB software, JAVA, C++ and object-oriented code.

69. (Currently amended) The method of claim 53, wherein the two or more of the data modules provide displays in the form of at least one of textual, graphical, multi-dimensional, oscilloscope, and spectrum analyzer.

70. (Original) The method of claim 53, wherein the dynamic system is at least one of a virtual system and a physical system.

71. (Canceled)

72. (Currently amended) In a simulation environment, a system for controlling collection of data generated by a dynamic system model, the system comprising:

an electronic device including:

a memory for storing:

computer program instructions for a simulation application that includes the dynamic system model, and

data generated by the dynamic system model, and

a processor for executing:

the stored computer program instructions, the computer program instructions including instructions for initializing the simulation ~~environment~~ application;~~, and~~

instructions for a controller system separate from the dynamic system model, the controller system including:

at least two free-running data modules, the free-running data modules communicatively coupled to collect data from the dynamic system model,

one or more functions, the one or more functions executed by at least two of the free-running data modules, and

at least one controller to control two or more of the free-running data modules to simultaneously execute at least one of the functions to achieve synchronization of at least one of collection or analysis of the generated data at a point in time.

73. (Currently amended) In a simulation environment, a system for controlling collection of data generated by a dynamic system model, the system comprising:

an electronic device including:

a memory for storing:

computer program instructions for a simulation application that includes the dynamic system model, and

data generated by the dynamic system model, and

a processor for executing:

the stored computer program instructions, the computer program instructions including instructions for initializing the simulation ~~environment~~ application;~~, and~~

instructions for a controller system separate from the dynamic system model, the controller system including:

at least two free-running data modules, the free-running data modules communicatively coupled to collect data from the dynamic system model,

a snapshot function executed by at least two of the free-running data modules that include a display of the data collected by that free-running data module, the snapshot function freezing the display of the data collected, and

at least one controller to control two or more of the free-running data modules to simultaneously execute the snapshot function to synchronously freeze ~~a~~ the displays of the data collected by the controlled data modules, the freezing occurring while the dynamic system model continues to execute and the generated data continues to be collected by the controlled data modules.

74. (Currently amended) In a simulation environment, a system for controlling collection of data generated by a dynamic system model, the system comprising:

an electronic device including:

a memory for storing:

computer program instructions for a simulation application that includes the dynamic system model, and

data generated by the dynamic system model, and

a processor for executing:

the stored computer program instructions, the computer program instructions including instructions for initializing the simulation ~~environment~~ application; ~~, and~~

instructions for a controller system separate from the dynamic system model, the controller system including:

at least two data modules, the data modules communicatively coupled to collect data from the dynamic system model, each of the at least two data modules operating in one of a free-running mode or a triggered mode, wherein a data module operating in triggered mode starts data collection when a trigger event occurs and stops data collection when

a stop event occurs, the trigger event being external to the data module, the stop event being internal to the data module,

a suspend function executed by at least two of the data modules, and

at least one controller to control two or more of the data modules to simultaneously execute the suspend function to synchronously pause collection of the generated data by the controlled data modules while the dynamic system model continues to operate, the controlling performed between the starting and the stopping of the controlled data modules.

75. (Canceled)

76. (Currently amended) A computer-readable storage medium storing computer-executable instructions for controlling collection of data generated by a dynamic system model when executed by a processor, the medium storing instructions for:

providing a controller system separate from the dynamic system model, the controller system including:

at least two free-running data modules, the free-running data modules communicatively coupled to collect data from the dynamic system model,

one or more functions, the one or more functions executed by at least two of the free-running data modules, and

at least one controller controlling two or more of the free-running data modules;

activating the dynamic system model, thereby generating data; and

controlling two or more of the free-running data modules to simultaneously execute at least one of the functions to achieve synchronization of at least one of collection or analysis of the generated data at a point in time, the controlling performed using the at least one controller.

77. (Currently amended) The medium of claim 76, where:

each of the two or more of the free-running data modules includes a display of the data collected by that free-running data module,

the at least one of the functions includes a snapshot function, the snapshot function freezing the display of the data collected at the free-running data module that executes the snapshot function, and where:

the controlling simultaneously executes the snapshot function at the two or more of the free-running data modules to synchronously freeze ~~a~~ the displays of the data collected by the controlled data modules, the freezing occurring while the dynamic system model continues to execute and the generated data continues to be collected by the controlled data modules.

78. (Previously presented) The medium of claim 77 further storing instructions for:

providing the display of data collected while data continues to be collected without updating the display.

79. (Currently amended) The medium of claim 77 further storing instructions for:

manipulating at least one of the frozen displays of data collected while data continues to be collected.

80. (Currently amended) The medium of claim 76, where:

the at least one of the functions includes a suspend function, and where:

the controlling simultaneously executes the suspend function at the two or more free-running data modules to synchronously pause collection of the generated data by the controlled data modules while the dynamic system continues to operate.

81. (Currently amended) The medium of claim 76 further storing instructions for:

providing an interface having a communication port for communicating with each of the two or more of the free-running data modules.

82. (Currently amended) The medium of claim 76 further storing instructions for:

directing a review of data collected by the two or more of the free-running data ~~collection instruments~~ modules by utilizing a review function.

83. (Previously presented) The medium of claim 76 further storing instructions for:

defining data history parameters utilizing a data history function.

84. (Previously presented) The medium of claim 83, wherein the data history parameters comprise at least one of amount of data history, amount of memory allocation for storing data history, types of data collected, signal attributes, and data formats.

85. (Previously presented) The medium of claim 76 further storing instructions for:

directing a buffering mode to be utilized during data collection from one of a circular buffering mode, a finite buffering mode, and a buffer extension mode by executing a data buffering mode function.

86. (Previously presented) The medium of claim 76 further storing instructions for:

utilizing a scroll function to scroll through previously collected data while the dynamic system model is operating.

87. (Currently amended) The medium of claim 76~~, the method further comprising~~ further storing instructions for:

providing a time tracking function that directs a graphical display indication of a time history of data collected.

88. (Currently amended) The medium of claim 76, wherein controlling the two or more of the free-running data modules comprises conveying to the two or more of the free-running data modules a direction to simultaneously execute the at least one of the functions by utilizing a broadcasting function.

89. (Previously presented) The medium of claim 76 further storing instructions for:

utilizing an event based trigger to initiate a data module action.

90. (Previously presented) The medium of claim 76, wherein the simulation environment comprises at least one of a graphical, textual, data flow, time based, and event based environments.

91. (Currently amended) The medium of claim 76, wherein the two or more of the free-running data modules are virtually formed using at least one of MATLAB software, JAVA, C++ and object-oriented code.

92. (Currently amended) The medium of claim 76, wherein the two or more of the free-running data modules provide displays in the form of at least one of textual, graphical, multi-dimensional, oscilloscope, and spectrum analyzer.

93. (Canceled)